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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/355,623	10/05/1999	OLLI PIIRAINEN	PM262375	6720

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PILLSBURY WINTHROP SHAW PITTMAN, LLP  
P.O. BOX 10500  
MCLEAN, VA 22102

EXAMINER
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TRAN, TUAN A

ART UNIT	PAPER NUMBER
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2682

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/355,623

Applicant(s)

PIIRAINEN, OLLI

Examiner

Tuan A. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-11, 13-15, 16-27 and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay et al. (5,357,513).

Regarding claim 1, Kay discloses a transmission method and apparatus used in a radio system that comprises at least one base station B (See figs. 1 and 37) and a number of subscriber terminals U at least two of which transmit access bursts to one and the same base station, the access burst activating between a subscriber terminal and a base station a connection that is established by a signal that is of a certain frequency and is sent in timeslots, characterized in that when the subscriber terminal is commanded to send the base station a signal that employs a timeslot and frequency that used by another subscriber terminal (See fig. 15 and col. 12 line 43 to col. 13 line 22), sending the subscriber terminal a command to adjust the transmission moment of signal so that the base station receives the transmitted signals at different moments within the same timeslot (See figs. 15-16, 23, 29-30, col. 13 lines 30-46, col. 15 line 8 to col. 16 line 48, col. 18 lines 3-16). However, Kay does not mention that the base station comprises a plurality of RF heads. Base station with multiple RF heads is well known in

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the art; therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ multiple RF heads to the base station of the radio system as disclosed by Kay for the advantage of enhancing signal quality as well as extending coverage of the base station to areas where signals are degraded due to terrain or obstacles such mountains, trees, buildings or walls.

Regarding claim 2, Kay further discloses the transmission moment is adjusted before an actual connection is established (See col. 13 lines 59-60).

Regarding claims 3-4, Kay further discloses the command is sent to delay or advance the transmission moment of the signal (See figs 29-30 and col. 18 lines 3-10).

Regarding claims 5-6, Kay further discloses the command is sent to advance or delay the transmission moment at most an 11-bit period (See fig. 14 and col. 12 line 65 to col. 13 line 3).

Regarding claim 7, Kay further discloses the transmission moment of the signal is adjusted by at most the tail bits at the beginning of the burst and the guard period at the end of the burst (See fig. 14).

Regarding claim 8, Kay further discloses the impulse responses are formed from the signals received by the base station being defined to have a length of a minimum of substantially 3 bits (See fig. 18 and col. 14 lines 45-56).

Regarding claim 9, Kay further discloses at least two signals of the same frequency are separated from each other, the signals have been received by the base station from one and the same timeslot (See figs. 14-16).

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Claims 17-27 and 29-33 are rejected for the same reasons as set forth in claim 1-11 and 13-16, as apparatus.

2. Claims 12 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay et al. (5,357,513) in view of Bjork et al. (6,084,862).

Regarding claim 12, Kay discloses as cited in claim 1. However, Kay does not explicitly mention that the signals received by the base station are correlated by means of a training sequence, the signal formed on the basis of the correlation are placed in windows, and the summed energies of the impulse responses of the signals placed in the window are compared. Bjork discloses signals received by the base station are correlated by means of a training sequence, the signal formed on the basis of the correlation are placed in windows, and the summed energies of the impulse responses of the signals placed in the window are compared (See figs. 2, 8 and col. 3 lines 30-50, col. 5 line 48 to col. 6 line 13, col. 6 lines 45-56, col. 9 line 18 to col. 12 line 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the teaching of Bjork in the method and apparatus as disclosed by Kay for the advantage of making accurate measurements of time dispersion.

Claim 28 is rejected for the same reasons as set forth in claim 12, as apparatus.

### ***Response to Arguments***

Applicant's arguments filed 04/26/2004 have been fully considered but they are not persuasive.

The Applicant argued that the cited prior art fails to teach or suggest the claimed transmission method (See Remark, page 1-2). The Examiner respectfully disagrees with the Applicant's arguments. In this instant case, Kay (US 5,357,513) does disclose the claimed transmission apparatus and method wherein the base station commands first and second subscriber terminals to adjust transmission moments of a first signal and a second signal respectively (See figs. 29-30 and col. 18 lines 3-16) so that the base station receives the transmitted first and second signals at different moments (different sub-slots) within the same time slot (See fig. 16). The cited reference (Kay reference) reads perfectly on the claimed subject matters of claims 1 and 17; therefore, the rejections are proper and stand for all pending claims.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Tran whose telephone number is (571)272-7858. The examiner can normally be reached on Mon-Fri, 10:00AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quochien Young can be reached on (571)272-7902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan Tran



QUOCHIE B. VUONG  
PRIMARY EXAMINER